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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/986,631	11/09/2001	Moo-Jong Lim	8733.532.00	5940

30827 7590 02/09/2005

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WASHINGTON, DC 20006

EXAMINER
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TRAN, HENRY N

ART UNIT	PAPER NUMBER
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2674

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/986,631

Applicant(s)

LIM ET AL.

Examiner

HENRY N TRAN

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2004.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 12-17 is/are allowed.  
6) ☒ Claim(s) 1-11 and 18-26 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 09 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/2/04 has been entered. Claims 1-26 remain pending in this application. Applicant's remarks have been fully considered, with the results set forth as follows.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-11 and 23-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Yoshihara et al (U.S. Patent No. 6,115,016, hereinafter referred to as "Yoshihara").

Yoshihara teaches a field sequential liquid crystal display device and methods for driving said display device, which comprises: a liquid crystal display (LCD) panel 21 having an upper substrate 2, a lower substrate 4, and a liquid crystal display layer 13 there between; a back light 22 comprising a LED array 7 of different color R, G and B light sources disposed directly under

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and at a down edge of the LCD and in a repeated sequence of Red, Green, and Blue LEDs as illustrated in figures 1, 2 and 6; an image signal processor comprising a data processor 31 and a back light controlling means 35 for driving the LEDs in four sub-periods in synchronism with pixel data PD provided by the data processor 31 controlling a lighting speed of each of the R, G and B light sources, which are serially or sequentially turned on for emitting red, green, blue lights in a first, a second, and a third sub-frame periods; and a combination of light sources, R, G and B are turned on for emitting light of a stressed color corresponding to at least one of the light source in a fourth sub-frame period by driving a fourth light source, which is a combination of at least one of the color light sources, using a synchronous signal SYN read from the processor 31 that provided pixel data PD that indicates a stressed color for the fourth sub-frame period; wherein, the liquid crystal layer is a Ferroelectric Liquid Crystal (FLC) or an Optical Compensated Birefringent, which is an antiferroelectric liquid crystal; and one frame period is 1/60 second about 16.6 ms; each sub-frame is shorter 1/240 seconds; see figures 1, 2, 4, 5 and 6; col. 4, line 64 to col. 5, line 64; col. 8, line 6 to col. 9, line 6. Claims 1-11 and 23-26 are therefore rejected.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshihara et al (U.S. Patent No. 6,115,016) in view of Yamazaki et al (U.S. Publication No. 2003/0058210, hereinafter referred to as "Yamazaki").

Yoshihara teaches generally all, including each sub-frame is shorter 1/240 seconds, except the method steps of: (i) providing a time interval between driving sections of a previous light source and the next line source as recited in claims 18 and 19; and (ii) the time interval is in the range of about 0.5msec ~ 1msec; and the number n of divided driving areas or the driving time of a back light is dependent on a degree of resolution and a response time of the LCD. Yamazaki teaches (i) providing a time interval between driving sections of a previous light source, e.g., R light source, and the next line source, e.g., G light source, see Fig. 5; and (ii) the time interval is in the range of about 0.5msec ~ 1msec; and the number n of divided driving areas or the driving time of a back light is dependent on a degree of resolution and a response time of the LCD, see Paragraphs 75-78. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the above identified teachings of Yamazaki in the Yoshihara' system because this would provide a high quality display system capable of substantially reducing the flicker of displayed images, see Yamazaki, Paragraph 80. By this rationale, claims 18-23 are therefore rejected.

***Allowable Subject Matter***

6. Claims 12-17 are allowed.

***Response to Arguments***

7. Applicants' arguments, see pages 8-9 of the amendment, filed 8/31/04, with respect to the amended claims 1-7 and 23-25 have been fully considered and are not persuasive because they relied on the newly added limitation: "a means for ..., wherein, the means indicates a stressed color corresponding to one of a light sources", which would require further search and consideration as indicates in the Advisory Action mailed 9/30/04. The indicated allowability of claims 8-11, 18-22 and 26 is withdrawn in view of the newly discovered reference(s) to Yoshihara et al (U.S. Patent No. 6,115,016) and Yamazaki et al (U.S. Publication No. 2003/0058210). Rejections based on the newly discovered references are discussed above.

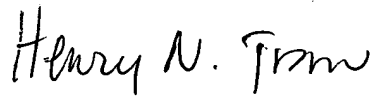
8. Applicant's arguments with respect to the newly amended claims 1-7 have been fully considered but they are not persuasive because Yoshihara back light controlling means 35 is read as the claimed element "...a means for controlling ..., whereby the light source are sequentially driven" as discussed in the rejection recited above.

***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HENRY N TRAN whose telephone number is 703-308-8410. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RICHARD A HJERPE can be reached on 703-305-4709. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



HENRY N TRAN  
Primary Examiner  
Art Unit 2674

2/7/05